

# **PROJECT ONE RULES OF THUMB**

ARC 466

Spring 2019

Craig Gullo



**Project Brief:** List the rules of thumb that your solutions use—why did you use these specific rules? Why are they appropriate to this site? Describe the reason for your proposed solution, responding to each of the minimum requirements.

Identify no less than 10 and no more than 25 rules of thumb.

**1. Room Dimensions.** *Keep room sizes below 16 feet in the narrow dimensions to save costs.*

Both bedrooms are 12 feet in the narrow direction. The large room after entry is a great room, thus a combination of a kitchen, living, and dining room. They conform to this rule when taking the union of them into consideration. The overall square footage was not to exceed 1500 sf, but considering this is still a conceptual model and that 25 of them must be placed into the allotted site, I wanted to stay as compact as possible. My goal is to maximize efficiency, circulation, and usage.

**2. Daylighting.** *Suitable daylight for habitable rooms when 25 degree vertical angle taken from the center of lowest windows is kept unobstructed.*

I tried to design the windows in optimal positions in each habitable room so as to maximize natural lighting and reduce artificial. The bedrooms especially were designed to allow light in without the bed, or potential furniture, from obstructing the flow of light no matter the angle taken. The bay window in the dining room was positioned to provide the great room with light from multiple angles.

**3. Kitchens.** *The Kitchen Work Triangle.*

I designed the geometry within the standards of the minimum 4 feet and maximum 9 feet runs for the sides of the kitchen work triangle, as well as keeping the sum of the sides between 13 and 26 feet at 18'10". The sink to the fridge is 5'8," and the sink to the stove is 5'2". I incorporate this rule in every design because the kitchen work triangle has proven to be very pragmatic with food prep and cooking. Long runs between these key features are not only impractical for cooking, but increase accidents and dropped/spoiled food incidents. No cabinets or obstacles interfere with the legs of the triangle, and no major traffic is routed that way.

**4. Clear Counter Area Around the Sink.** *At least 24 inches on one side and 18 inches on the other.*

I dimensioned the counter area on both sides of the sink in accordance with this rule. This should be more than just a rule of thumb, if space permits, because not having adjacent sink space is frustrating when prepping food and doing dishes. On this site, I had the space to include a generous kitchen space and so fitting the parameters of both the kitchen work triangle and this rule is important.

**5. Stove or Cooktop Clear Area.** *At least 15 inches on one side and 12 inches on the other.*

Similar to the sink clear space, an oven should have its own clearances for placing things down nearest by while opening the oven door or operating the stove top. Long walks with heavier food items, like turkeys, are not ideal. Prepping food that is to be cooked soon thereafter should preferably be done in close proximity to the cooking source. Having some clear area on both sides can be extremely effective when larger meals are prepped.

**6. Seating Area.** *Where no traffic passes allow 32 inches.*

I placed my dining room table 2'8" behind the big bay window on the south side of the dwelling. The table was situated with enough space for someone to walk behind it on the window side without calling it a traffic lane. I like this rule because it creates openness around the main eating area rather than an encumbrance. This also fit within the open space notion I incorporated into this conceptual model.

**7. Thermostat.** *Incorporating various placement rules listed in rule of thumb breakdown.*

The thermostat was placed in the node between the bedrooms and bathroom. This is a good location via the rule because it is on an inside wall, away from direct sun and far enough from kitchen heat, easily accessible and not behind furniture or shelves. This is another rule of thumb that is also common sense. Putting it in an exterior door path or an inconvenient location makes no sense in any dwelling.

**8. Passive solar systems.** *Most windows on the south side of building.*

Most of the windows are on the south side of the dwelling, including the biggest one, the bay window. This side of the building will receive sunlight between 9am and 3pm during the heating season. This side also faces the open floor plan that ties into this rule. I used this rule because it makes sense to light the house as much during the day with natural light. It will also reduce heating costs during colder months.

**9. Lot and Neighborhood.** *Minimizing the building's footprint.*

Although we were allowed to use up to 1500 sf, I designed this building under 1200 sf while still incorporating all the assigned rooms, plus a mechanical room. This preliminary design is rectangular, so the rooms are easy to design and reduce cost. Foundations are expensive but this design makes them an easier pour with less formwork, which saves money and has less impact on the site. We need 25 lots and this simple design minimizes labor and materials.

**10. Privacy.** *Design considerations for privacy.*

Although the dwelling offers an open floor plan and great room, the bedrooms and bathroom are separated by a small hallway node. This maximizes space for door placements but also keeps sleeping and restroom areas somewhat private, considering the small space we have in accordance to this site.

**11. Receptacle Placement.**

Outlets are within six feet of one another and are on each wall. GFCI outlets will be placed within two feet of the sinks in the kitchen and bathroom counters and every four feet thereafter.

**12. Minimum Glazing and Ventilation Areas.** *Eight and four percent of the floor area respectively.*

I made sure windows throughout house are egress so that in the case of a fire, people can get out, or a firefighter, with standard backpack, can get in. They are less than 44 inches from the ground and double hung with swing out feature that opens up to a 5.7 sf opening. The bottom sash slides up to provide the 4% ventilation mandatory to code.